

Collaborative Outbound Taxi Metering for Environmental Benefits, Phase I

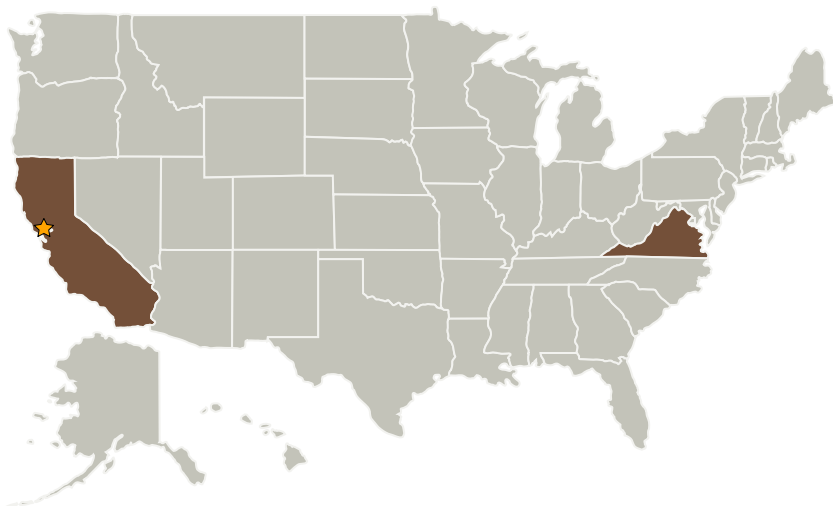
Completed Technology Project (2008 - 2008)



Project Introduction

This proposal addresses the concept of Collaborative Outbound Taxi Metering (COTM), which provides environmental benefits without sacrificing throughput. In current operations, departure flights must block out of their parking gates to claim their first-come, first-served departure slot. When departure demand exceeds capacity, flights experience delay in departure queues near the runway. The need for flights to make incremental steps in the queue significantly increases the engine emissions produced because of the number of times aircraft must apply 'break-away' power, only to stop again after moving just a short distance. Under the COTM concept, metering techniques assign and maintain departure slots for all departure flights even if aircraft remain at their parking gates. Mosaic ATM has conducted initial analysis using historical operational data demonstrating the potential environmental benefits even in the presence of arrival flights requiring parking gates. This concept has already been applied and shown significant benefits during over-night operations of air cargo carriers. Implementing the concept across the entire NAS has not been possible due to the requirement to coordinate departure metering amongst multiple airport users. We propose to further demonstrate the feasibility and benefits of the COTM concept at large hub airports.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Ames Research Center (ARC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★ Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
Mosaic ATM, Inc.	Supporting Organization	Industry	Leesburg, Virginia

Primary U.S. Work Locations	
California	Virginia

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Bryan C Wood

Technology Areas

Primary:

- TX16 Air Traffic Management and Range Tracking Systems
 - └ TX16.3 Traffic Management Concepts